

Sonic Immersion System



Owner's Manual and Dealer's Installation Guide



DIMENSION ONE SPAS®
HOME HYDROTHERAPY

Sonic Immersion System

Table of Contents

OWNER'S MANUAL	1
FEATURES OF THE SONIC IMMERSION	1
USING THE CD PLAYER	1
DEALER INSTALLATION	2
GETTING READY TO START	3
<i>Overview of the Installation</i>	3
<i>Required Tools</i>	4
<i>Parts List</i>	6
REMOVING PANELS	8
<i>Remove Equipment Compartment Panel</i>	8
<i>Remove the Sub Woofer Compartment Panel</i>	10
INSTALLING THE SUB WOOFER COMPARTMENT	13
PRE WIRING FROM EQUIPMENT COMPARTMENT TO SUB WOOFER COMPARTMENT	19
INSTALLATION OF POWER SUPPLY	24
<i>Pre-Wire Power Supply</i>	24
<i>Installing Power Supply in Equipment Compartment</i>	27
<i>Wiring the Power Supply</i>	29
<i>Determining Location of CD Weather Cover</i>	31
<i>Cutting Panel Hole for CD Player Door Assembly</i>	32
<i>Installation of CD Player Door and Bezel</i>	35
<i>Installation of Panel and CD Player</i>	36
INSTALLING THE SATELLITE SPEAKERS	37
<i>Installing the Satellite Speaker Wires</i>	40
SECURING THE AMPLIFIER	44
COMPLETE THE INSTALLATION	44

Sonic Immersion System

Owner's Manual

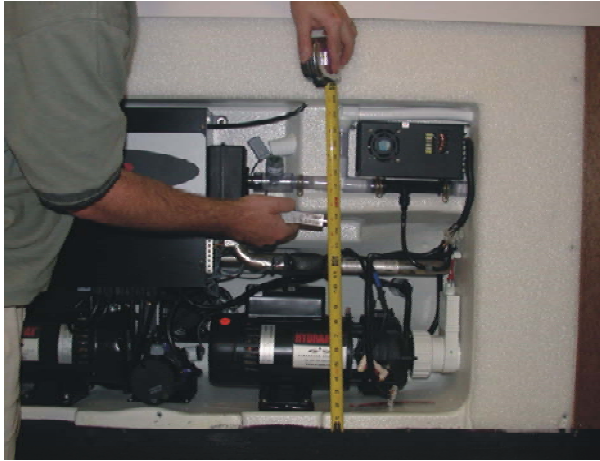
Features of the Sonic Immersion

- Dealer installation allows you to add to any Sonic Immersion System ready Dimension One Spa in stock
- Patented planar magnetic speaker technology (1/4" thick) that generates unparalleled sound quality even in the harshest environmental conditions
- Superior fidelity and low distortion
- Articulated speaker mount that allows multidirectional capability and if the speakers are struck by an object, speakers deflect without being damaged
- Remote operation

Using the CD Player

The manufacturer of the Sonic Immersion System CD Player has supplied a User Guide for the CD player. Please refer to this guide for instructions on how on use of the CD player.

Dealer Installation



This section intended for use by authorized dealer personnel only

Getting Ready To Start

The Sonic Immersion System can only be installed on spas with the following serial numbers.

Table I Sonic Immersion System Ready Spas

Model	Serial Number
Aurora HP	91275 or higher
Aurora II	91210 and higher (Also 91184)
Aurora XLT	91295 and higher
Caliente HP	91301 and higher (Also 91290 and 91299)
Californian	91198 and higher
Chairman	91245 and higher
Chairman II	91234 and higher
Diplomat	91197 and higher
Nautilus	91458 and higher (Also 91455)
Triad	91372
Triad II	91625 an higher (Also 91567)

Overview of the Installation











The installation of the **Sonic Immersion System** is a simple process that includes removing the spa skirt, drilling a few holes using the templates provided to guide you, and then connecting one or more power cables. This guide is provided to help complete this task in a quick and efficient manner.

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Required Tools

You will need the following tools to complete the installation:

Table 2 Required Tools

	Electric drill
	1 1/2 inch hole saw
	1/4 inch drill bit
	3/8 inch drill bit
	Saber Saw
	Phillips screwdriver
	Tape (masking, electrical, duct, or packaging) 1/2 in width
	Spring-loaded punch (or other tool(s) that can be used to mark drilling locations, such as a hammer & nail)
	Fine Point Marker
	Measuring Tape
	Fish Tape
	Fish Tape Lubricant

Sonic Immersion System Dealer Installation Guide

Non Ratcheting PVC Pipe Cutter



Medium Size Needle Nose Pliers



Wire Stripper

Utility Knife

5/16" Nut Driver or wrench

Six inch square



Stapler and Staples



Straight Edge



Safety Glasses

Silicone caulking (clear)




Small Saw

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Parts List

You should have received the following parts in the **Sonic Immersion System** installation kit:




Table 3 Parts List

Description	Qty	Item Number	
This document	1	01510-1030	
Amplifier	1	01564-08	
Coarse-Threaded Drywall Screws	5	01051-06	
Template	1	Doc 74-Rev A	
Power Supply Harness	1	01564-19	
Power, supply, stereo	1	01564-01	
Main Harness	1	01564-20	
Speaker, lead	2	01564-21	

Sonic Immersion System Dealer Installation Guide

Speakers, Satellite	2	01564-14	
Stereo	1	01564-03	
Sub-woofer sub assembly	1	01564-09	
Stereo cover, marine	1	01564-04	
Dual pole antenna	1	01564-05	
Preamp stereo, cable	2	01570-24	
Power supply screw, sheet metal, SS, PH	2	01011-38	

Sonic Immersion System Dealer Installation Guide

Marine cover screws, #8 x 1/2" SS Truss Head	4	01011-40	
Cable Ty, 4" black	10	01200-006	
Cable Ty Mount	10	01200-005	

Removing Panels

In order to install the system up to three panels must be removed from the spa: the equipment compartment panel, the panel where the sub woofer is installed, and the panel where the Satellite Speakers are to be installed.

Remove Equipment Compartment Panel



Warning

Possible Electrical Shock Hazard

1. Turn off the main spa circuit breaker located in the disconnect box or house panel.
2. Verify that all power has been turned off before continuing installation.



Refer to the Spa Service Manual to determine how to confirm that all power to the spa has been turned off.

Sonic Immersion System Dealer Installation Guide

3. Locate the spa's Main Top Side Control.



4. The Lower Control is located in the equipment compartment behind the spa panel below the Main Top Side Control.
5. Use the screwdriver to remove the equipment compartment panel screws.





The number of screws to be removed will depend on the model of spa.

Remove the Sub Woofer Compartment Panel

The installation location of the sub woofer compartment will vary from one spa model to another. Use Table 3 to locate the compartment on your spa. **First, stand in front of the spa facing the Top Side Control (at the 6 o'clock position, see below) and then refer to Table 4 below.**





Sonic Immersion System Dealer Installation Guide

Sub-Woofer Installation Locator



Top Side Control

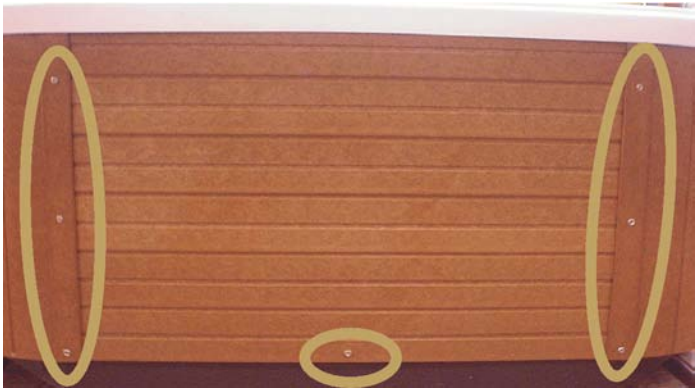
Table 4 Model List

<i>Model and Number</i>	<i>Location of Installation</i>
Aurora II and Chairman	Installation Locator 
Chairman II and Aurora XLT	
Diplomat, Californian	Installation Locator 
Nautilus	Installation Locator 

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- I. Use the screwdriver to remove the spa panel screws.

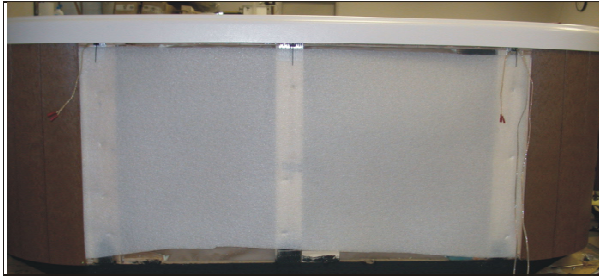


The number of screws to be removed will depend on the model of spa.

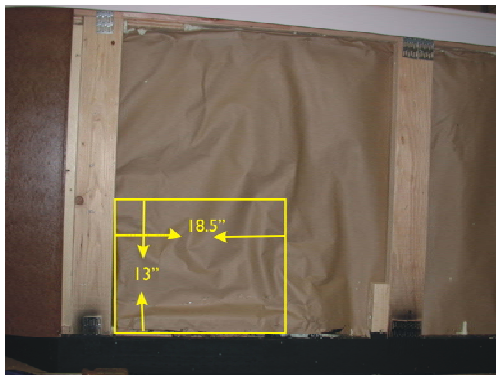
Installing the Sub Woofer Compartment

The installation of the sub woofer compartment consists of removing the panel, removing the paper cover, exposing the plug, removing the plug, and installing the sub woofer compartment.

1. If you have a spa with wood siding you may skip to Step 2. If your spa has EnviroTect™ siding you will need to remove the white foam sheeting.



2. Using a locking utility knife set for a depth of about ½ inch, cut a 13" X 18.5" rectangle as shown in the photo below. Remove the paper and foam until you expose the sub woofer plug. You may need to use a screwdriver or other tool to remove the paper and foam.



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Note

The photograph above may not look like your spa, refer to Table 3.



3. Once the plug is exposed, use a screwdriver to punch holes in the foam large enough to insert your hands and pull the plug out of the spa.



Note

The plug may not come out in one piece.

Sonic Immersion System Dealer Installation Guide

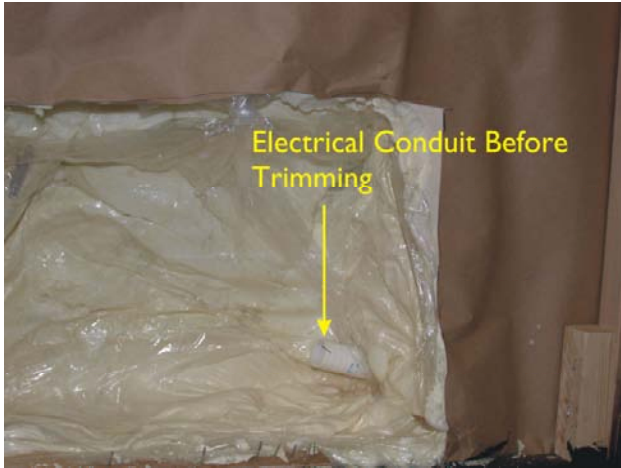


4. Use a medium size pair of needle nose pliers to remove the large staples in the bottom rail where the plug was removed.
5. Remove all remnants of the plastic bag inside the compartment where the plug was removed. This will expose the electrical conduit.

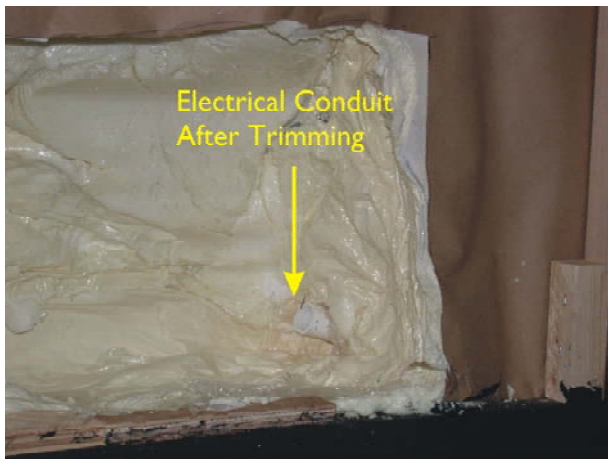


The electrical conduit may not always be in this location. It will vary from spa to spa.

Sonic Immersion System Dealer Installation Guide



6. Using a non-ratcheting PVC pipe cutter, trim the electrical conduit flush with the foam wall.



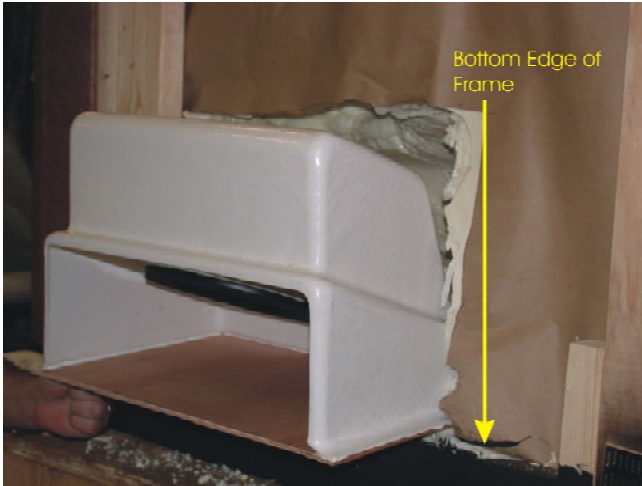
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7. Locate the sub woofer sub assembly (P/N 01564-09). Locate the spot on the compartment that matches the location of the conduit in the spa. Using a 1½ inch hole saw, drill a hole for the conduit.



8. Try to place the sub woofer compartment into the space where the plug was removed. It must fit flush with the bottom edge of the frame. In order to accomplish this it may be necessary to remove additional foam.

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9. A properly positioned sub woofer compartment is shown in the following photograph.



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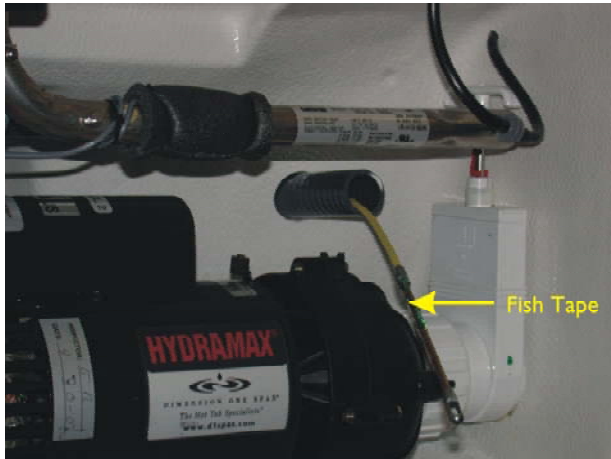
10. Once you are satisfied that the compartment fits properly, secure the compartment to the frame with 5 1" coarse-threaded drywall screws (P/N 01051-06 provided in hardware package).



Pre Wiring from Equipment Compartment to Sub Woofer Compartment

1. Feed the fish tape through the conduit from the sub-woofer compartment to the equipment compartment.

Sonic Immersion System Dealer Installation Guide



2. Now locate the amplifier cables (two white and two red RCA connectors on both ends, P/N 01570-24). Locate the three-branched harness assembly (P/N 01564-20). One branch will be considerably longer than the other two.
3. Attach the preamp stereo cables (01570-24) and long branch of main harness (01564-20) to fish tape using electrical tape.



Sonic Immersion System Dealer Installation Guide

4. Apply a small amount of fish tape lubricant to a cloth and then run the cables through the rag to give them a light coating of lubricant.



5. Now pull them through the conduit from the equipment compartment to the sub-woofer compartment.



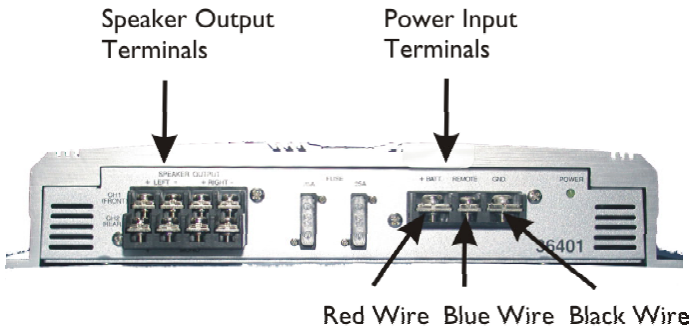
6. Now that the harness and cables have been fished through the conduit from the equipment compartment to the sub-woofer compartment, the wires and cables can be connected to the amplifier in the sub-woofer compartment. You may want to trim off some of the harness because it could be

Sonic Immersion System Dealer Installation Guide

longer than necessary. Make sure that when the wires are connected to the amplifier that the amplifier can be moved out to make adjustments. Using a wire stripper, strip approximately $\frac{1}{2}$ inch of insulator from the 3 conductor wires.

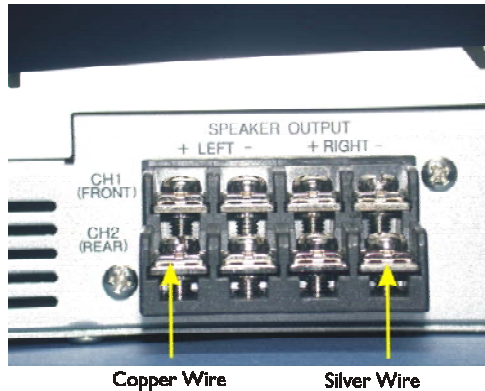


7. Connect the black wire to the terminal marked GND. Connect the red wire to the terminal marked “+ BATT”, and connect the blue wire to the terminal marked “REMOTE”.

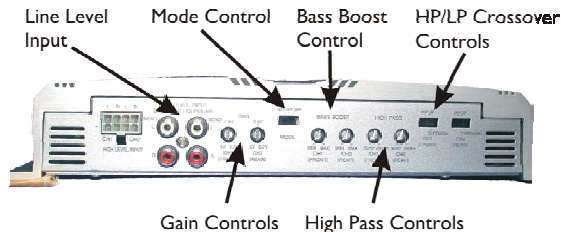


Sonic Immersion System Dealer Installation Guide

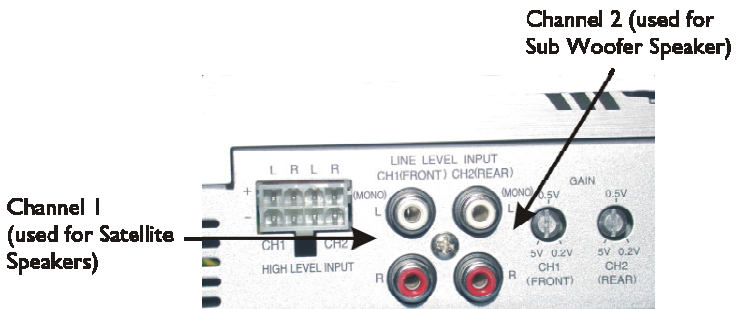
8. Locate the wire coming from the sub-woofer. This wire is covered with clear insulator. The wire has two conductors. One is copper-colored and the other is silver. Strip approximately $\frac{1}{2}$ inch of insulator from each wire and twist each to form a tight bundle. Connect the copper colored wire to the terminal marked "CH2 (REAR) + LEFT". Connect the silver colored wire to the terminal marked "CH2 (REAR) - RIGHT".



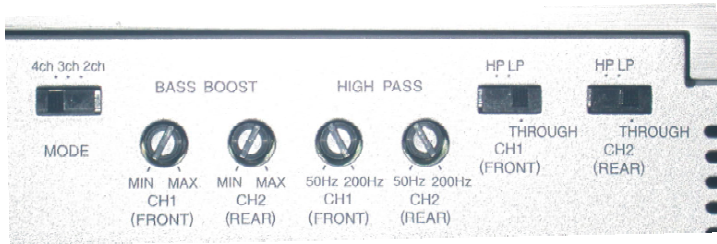
9. Connect red and white preamp input wires to the Line Level Input terminals as follows: connect Channel 1 (flat speaker) to red and white terminals on left, connect Channel 2 (sub-woofer speaker) to red and white terminals on right.



Sonic Immersion System Dealer Installation Guide



10. Set GAIN CH 1 and CH 2 to 0.5V position.
11. Set MODE to the 3ch position.



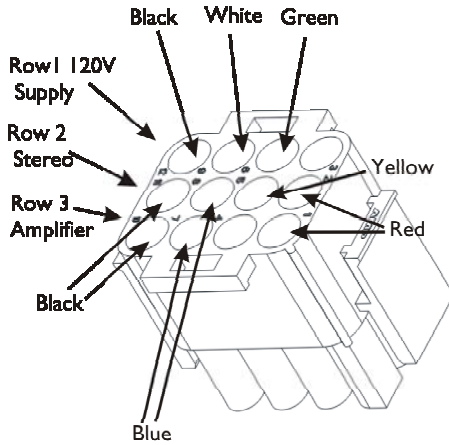
12. Set BASS BOOST CH 1 and CH 2 to the MIN position.
13. Set HIGH PASS CH 1 and CH 2 to the 200 HZ positions.
14. Set CH 1 to HP position and CH 2 to LP position.

Installation of Power Supply

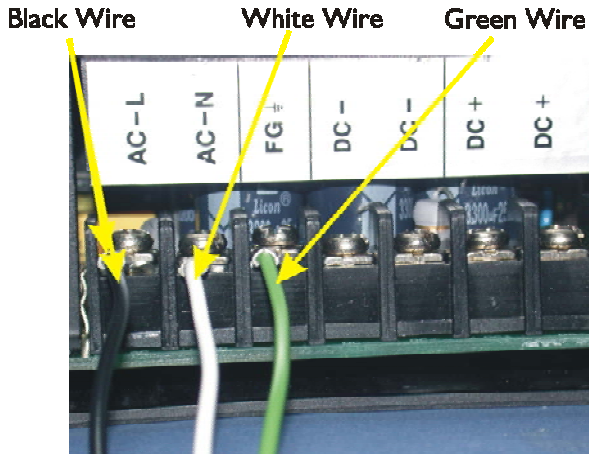
Pre-Wire Power Supply

Locate the power supply kit that contains the power supply (P/N 01564-0) and a 12-pin connector (P/N 01564-19) containing wires in the following configuration:

Sonic Immersion System Dealer Installation Guide

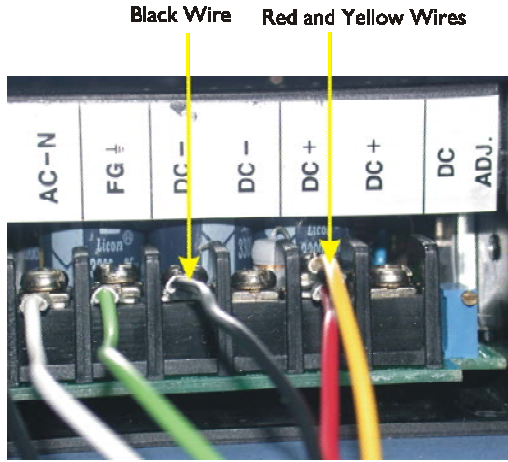


1. Connect the wires from Row 1 (120 V Supply) to the power supply as follows: black wire to the terminal marked "AC-L", the white wire to terminal marked "AC-N", and the green wire to the terminal marked "FG".

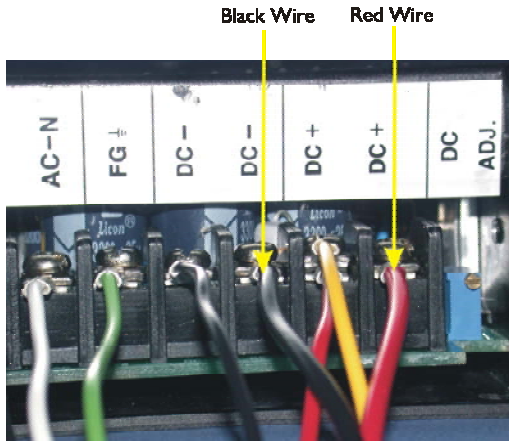


Sonic Immersion System Dealer Installation Guide

2. Connect the wires coming from Row 2 (Stereo +12 V Supply) as follows: (see picture below) yellow and red wires to terminal marked “DC+” and the black wire to terminal marked “DC-“.



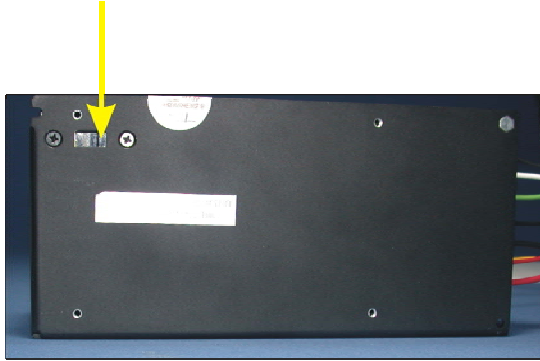
3. Connect the wires coming from Row 3 (Amplifier) as follows (see picture below): red wire to unused terminal marked “DC+” and black wire to unused terminal marked “DC-“.



Installing Power Supply in Equipment Compartment

1. Turn the power supply so that you can see the Voltage Selector Switch, see picture below, and place the switch in the correct position (115V for UL and CSA spas or 240V for CE spas) for your location.

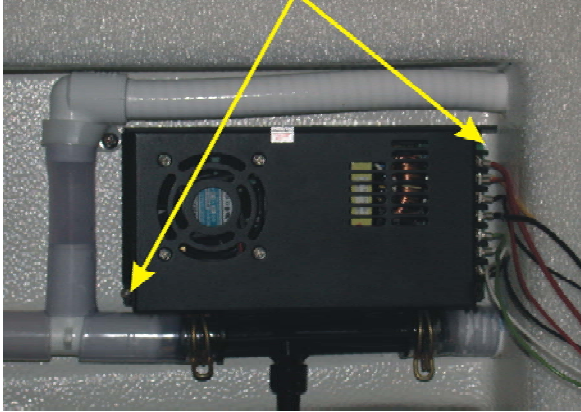
Voltage Switch



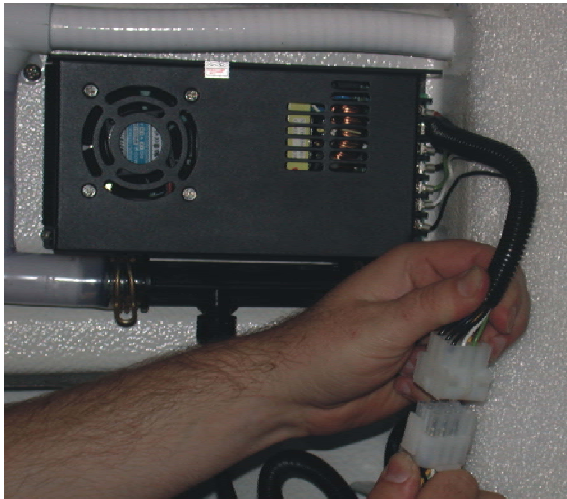
2. Locate two #8 x 1/2" Pan head screws (P/N 01011-38) in the power supply kit. The power supply has two holes for attaching it to the wall of the equipment compartment, see picture below. Locate the hole in the upper right corner of the power supply. Use electric screwdriver to secure the power supply. Now use the remaining screw to secure the left bottom corner of the power supply.

Sonic Immersion System Dealer Installation Guide

Location of Upper
and Lower Screw Holes

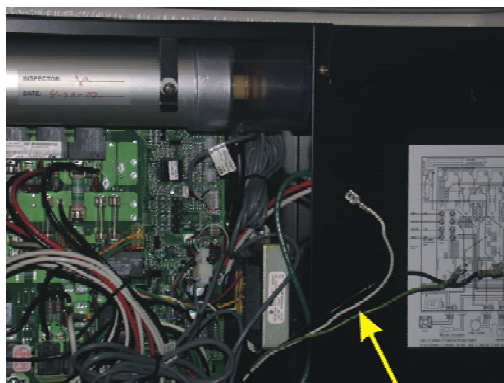


3. Locate the connector on the harness assembly that matches the one that you just installed on the power supply and connect them together.



Wiring the Power Supply

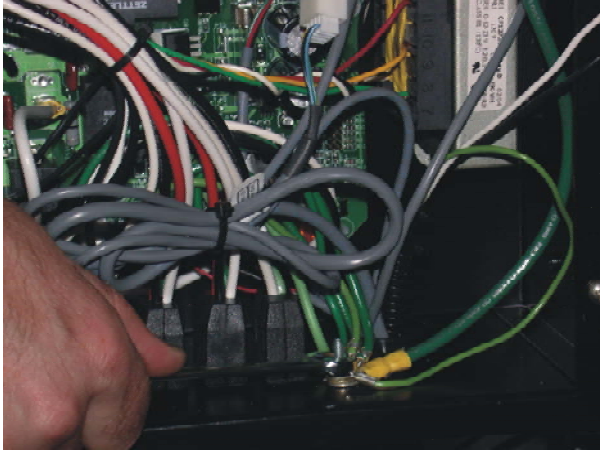
1. Locate the end of the harness that has a green, black, and white wire (with connectors). Remove lower control box cover. Insert these wires through the hole in the bottom of the lower control box.



**Wires Inserted Through Hole
in Bottom of Lower Control
Box**

2. Using a 5/16" nut driver or wrench remove the 5/16" nut that secures the ground wires to the bottom lower control box, see following picture.

Sonic Immersion System Dealer Installation Guide



3. Now place the green ground wire that you just inserted into the lower control box over the screw, replace 5/16" nut, and secure with 5/16" nut driver or wrench.
4. Connect the white and black wires to the pins as outlined in the following table.

Table 5 Pin Connectors

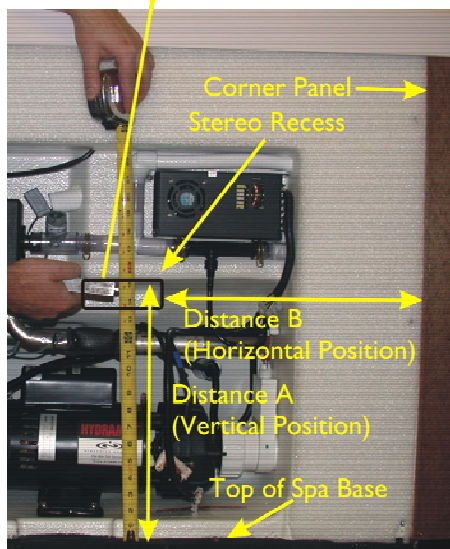
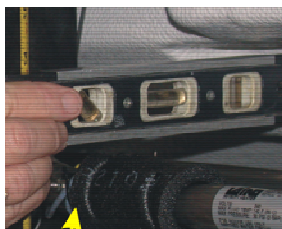
Board Description	Pin Connections
MSPA-MP for U.S. and Canada	Green – ground White – P-40 Black - -P-55

Determining Location of CD Weather Cover

The installation location of the CD Player Weather Cover (P/N 01564-04) depends on the model of the spa. The following steps will guide you through the process of determining the installation location.

1. Refer to picture below. Measure distances A and B.

Detail of Stereo Recess Area



Sonic Immersion System Dealer Installation Guide



It is important that the ruler or square (see picture on previous page) be kept level and at the top of the recess area while making these measurements.

2. Use the measurements determined in Step 1 and insert them into the following formula:

Distance A = _____ Distance B = _____

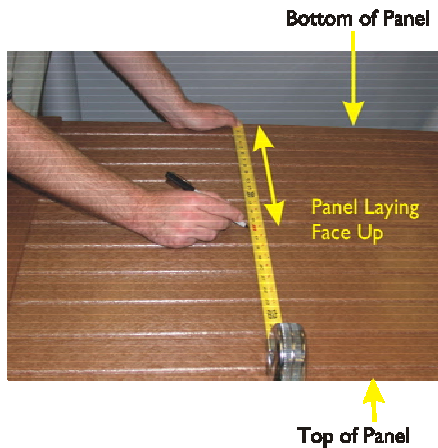
$A + 1'' = \text{Vertical Position (VP)}$ _____

$B + \frac{3}{4}'' = \text{Horizontal Position (HP)}$ _____

3. Now proceed to Cutting Panel Hole for CD Player

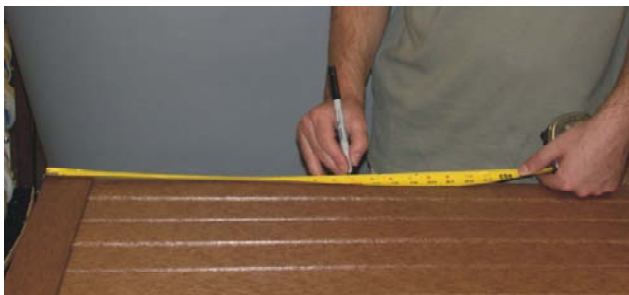
Cutting Panel Hole for CD Player Door Assembly

1. Using number obtained for the Vertical Position (VP), measure up from bottom of panel, see below, and mark spot with a fine point marker.

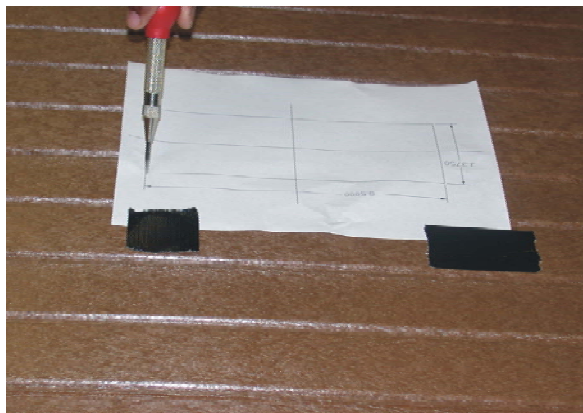


Sonic Immersion System Dealer Installation Guide

- Using measurement obtained for Horizontal Position (HP), measure from side of panel, see below, and mark spot with a fine point marker.



- The point where these two lines intersect is the **upper right** corner of the template (P/N Doc 74 Rev A).
- Align the upper right corner of the template with the mark on the panel. Use a center punch to mark the spot.

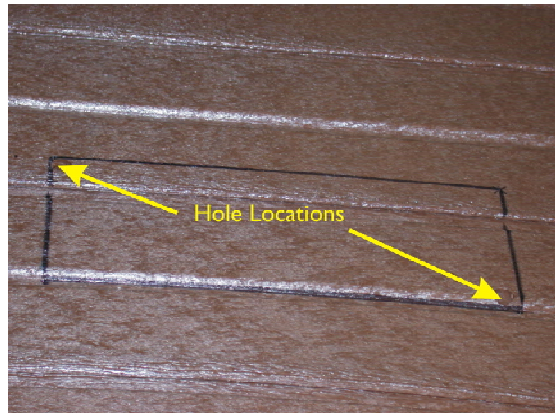


- Square up the template on the panel and use the center punch to mark the other three corners.
- Using a machinist's square or straight edge, connect all four marks.

Sonic Immersion System Dealer Installation Guide

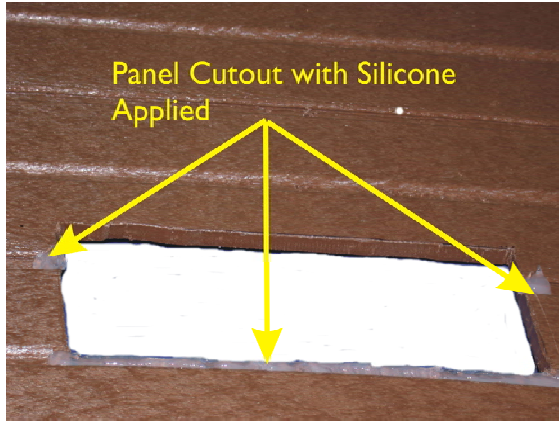


7. Using a 3/8" bit, drill holes in two corners of the rectangle. Make certain that the holes are within the lines. Using a center punch to mark the drilling centers will prevent the drill bit from wandering.



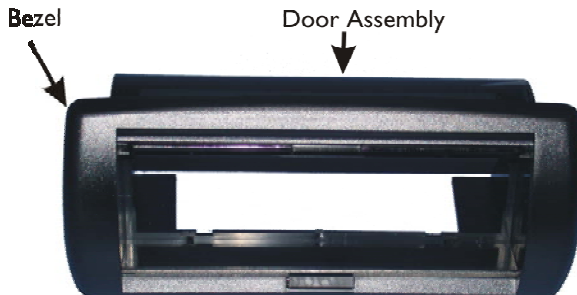
8. Using a saber saw, cut out the rectangular piece from the panel.
9. Depending on where the hole in the panel is located you may need to use some Silicone caulking in the panel grooves to prevent moisture from entering the CD player, see picture below.

Sonic Immersion System Dealer Installation Guide



Installation of CD Player Door and Bezel

If the bezel is not removed from the door assembly (P/N 01564-04), remove it by pulling from the bottom of the bezel and then proceed as follows:



1. Place the door assembly in the cutout. Make certain the door will open and close freely. Door should open from bottom.
2. Locate 4 # 8 x 1" SS Truss Head screws (P/N 01011-40) provided with kit. Using an electric screwdriver attach the door assembly to the panel.

Sonic Immersion System Dealer Installation Guide



To prevent wood panels from splitting, drill pilot holes before installing the door assembly.



3. Reattach the bezel.
4. Locate the mounting sleeve supplied with the CD player and refer to the CD Player Owner's manual for directions on how to install this sleeve. Once the CD player mounting sleeve is installed in the panel, proceed to the following paragraph.

Installation of Panel and CD Player

1. Place the Dual Pole Antenna (P/N 01564-05) in the equipment compartment.
2. Place the panel up against spa so that you can pull the main harness, antenna, and amplifier cables through the door assembly.

Sonic Immersion System Dealer Installation Guide



3. Reattach panel to spa.
4. Connect antenna, main harness and amplifier to CD player as described in CD player owner's manual. Connect power supply cable (long branch of main harness) to power supply connector on CD player. Connect Channel 1 preamp stereo cables (RCA cable) to FRONT connectors on the CD player and the Channel 2 cables to the REAR connectors on the CD player.



Connecting the preamp cables (RCA cables) in this manner will allow the front and rear faders to increase or decrease the sound level of the sub-woofer or satellite speakers.

5. Then slide CD player into sleeve and lock in position.

Installing the Satellite Speakers

Locate the panel where you will install the speakers.

Sonic Immersion System Dealer Installation Guide



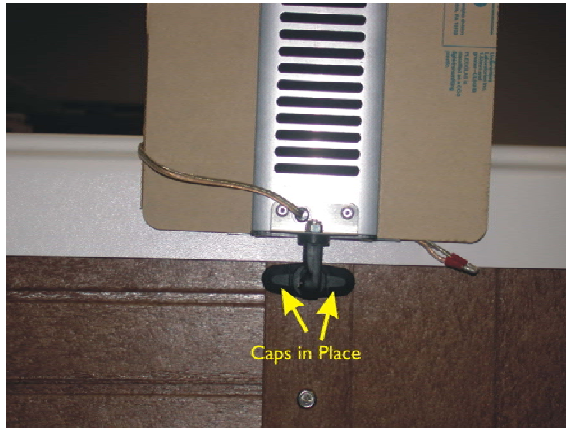
1. Take the hinge mounting bracket connected to the speaker (P/N 01564-14) and place it on the panel with the top triangular portion of the hinge butting up against the lower edge of the overhanging spa lip.
2. Remove the protective caps from the hinge screw holes and using a center punch mark the locations for the screws.
3. Locate the four mounting screws that come with the hinges. Using an electric screwdriver, attach the hinges to the spa panel.



To prevent wood panels from splitting, drill pilot holes before installing the hinges.

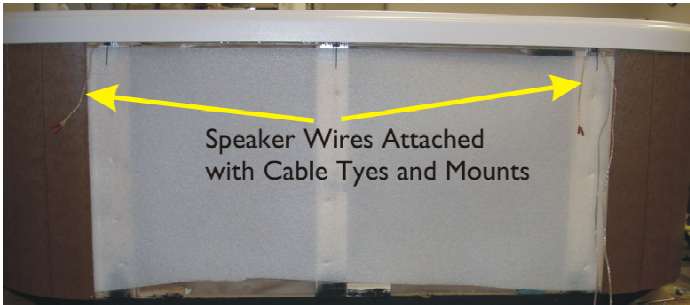
4. Replace the protective caps over the hinge screws.

Sonic Immersion System Dealer Installation Guide



Installing the Satellite Speaker Wires

1. Remove the panel where you just finished installing the speakers.
2. Locate two speaker wire sets (P/N 01564-21). The wires have clear insulator with a silver and copper wire and female connectors on one end.
3. Using a Cable Tyes and Cable Mounts (P/N 01200-006 and 01200-005), attach the wires to the frame in the approximate location of the speakers directly below the edge of the spa, see picture below, until you come to the corner panel.

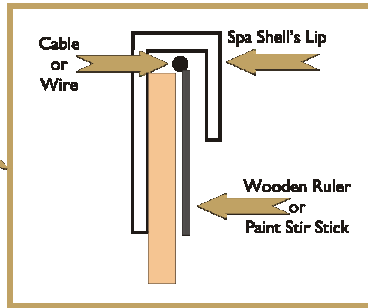


4. When you get to the corner panel use a thin, blunt object to force the wires up under the overhanging lip of the spa and the panel.

Sonic Immersion System Dealer Installation Guide



When pushed all the way up under the lip, the wire, or cable, will rest safely on the top of the spa wall.



Install Wire or Cable under the spa shell's lip.

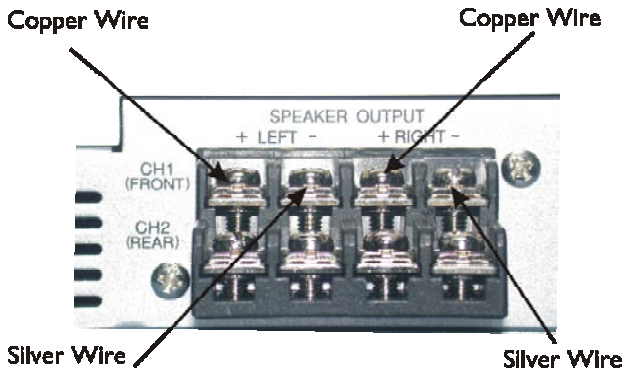


Sonic Immersion System Dealer Installation Guide

- Continue installing the wire until you reach the panel where the sub-woofer compartment has been installed. Now use the Cable Tyes and Cable Mounts to attach the wire to the wood until you reach the sub woofer compartment.

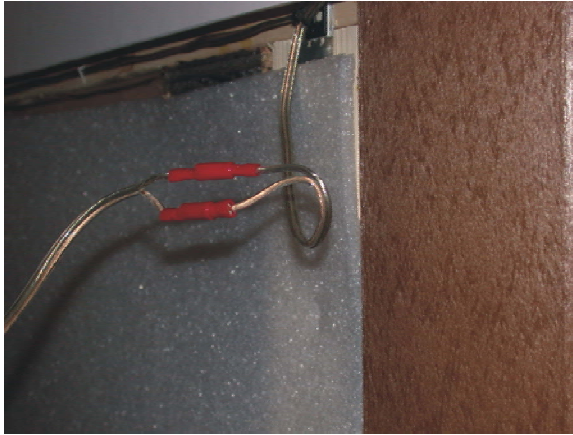


- Trim any excess wire leaving enough to connect the amplifier and approximately 12 inches of slack. Then strip approximately 1/2 " of insulator from each wire.
- Connect the wires to amplifier as follows:



Sonic Immersion System Dealer Installation Guide

8. Now connect the wires coming from the sub-woofer compartment to the satellite speakers. The wires from the speakers have male connectors and the wires coming from the sub-woofer have female connectors.



9. Place the panel back on the spa and secure with screws. The finished installation should appear as in the pictures shown below.



Securing the Amplifier

Now that the speakers have been installed and the amplifier has been adjusted it can be secured to the frame with dry wall screws supplied in the kit (P/N 01051-06).



Complete the Installation

Replace the spa panels to complete the installation.

Part No. 01510-1030 Rev A

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